File 351:DERWENT WPI 1963-1998/UD=9826;UP=9823;UM=9821
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DIALOG(R)File 351:DERWENT WPI

010206903
WPI Acc No: 95-108157/199515
Disinfection and biological combat of plant pathogens in recirculating watering system for plant crops - involves disinfection of watering system with peracetic acid and subsequent biological combat of plant pathogens.
Patent Assignee: DIVERSEY AS (DIVE-N)
Inventor: LIPPERT F
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
DK 9300538	A	19941111	DK 93538	A	19930510	C02F-001/50	199515 B

Priority Applications (No Type Date): DK 93538 A 19930510

Abstract (Basic): DK 9300538 A
Disinfection of the recirculating watering system to the plant crop comprises treating with peracetic acid, followed by a subsequent biological combat of plant pathogens by addition of microorganisms with biological combat effect, or via a natural formation of Trichoderma spp. With disinfection a plant-damaging low pH can be avoided by the addition of peracetic acid to the raw water or the loading of phosphoric acid for the prepn. of fertilising water.
USE - To disinfect and combat biological plant pathogens in recirculating watering system for plant crops.
Derwent Class: C05; D15
International Patent Class (Main): C02F-001/50
International Patent Class (Additional): C02F-009/00

2/7/1
DIALOG(R)File 351:Derwent WPI

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International Patent Class (Additional): C02F-009/00

1/9/2
DIALOG(R)File 345:Inpadoc/Fam.& Legal Stat

11330406
Basic Patent (No,Kind,Date): DK 9300538 A0 19930510 <No. of Patents: 002>

PATENT FAMILY:
DENMARK (DK)
Patent (No,Kind,Date): DK 9300538 A 19941111
DESINFEKTION OG BIOLOGISK BEKAEMPELSE AF PLANTEPATOGENER I RECIRKULERENDE VANDINGSSYSTEMER TIL PLANTEAVL (Danish)
Patent Assignee: DIVERSEY A S (DK)
Author (Inventor): LIPPERT FLEMMING
Priority (No,Kind,Date): DK 93538 A 19930510
Applic (No,Kind,Date): DK 93538 A 19930510
IPC: * C02F-001/50; C02F-009/00
Derwent WPI Acc No: ; C 95-108157
Language of Document: Danish
Patent (No,Kind,Date): DK 9300538 A0 19930510
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Applic (No,Kind,Date): DK 93538 A 19930510
IPC: * C02F-001/50; C02F-009/00
Language of Document: Danish

DENMARK (DK)
Legal Status (No,Type,Date,Code,Text):
DK 93538 A 19930510 DK AEA DATA OF DOMESTIC APPLICATION (DATA OF DOMESTIC APPL.) DK 93538 A 19930510
DK 93538 A 19930510 DK A0 APPLICATION FILED
DK 93538 A 19941111 DK A PUBLISHED APPLICATION
DK 93538 A 19980302 DK ARF APPLICATION REFUSED (APPL. REFUSED)
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Danish patent 0538/9310

Disinfection and biological control of plant pathogens in circulating water systems used for cultivation.

Applicant: Diversey

The invention relates to:

1. A method for disinfection, with peracetic acid, of circulating water systems for cultivation while this in operation.

2. Method for the biological control of plant pathogens via preceding disinfection of circulating irrigation water.

Background

In the case of intensive cultivation within the horticultural sector, the irrigation water to which fertiliser has been added is circulated. This makes it possible to achieve savings in water and fertiliser while, at the same time, the system can encourage and rapidly spread plant pathogens via the irrigation water.

In the case of the known methods for disinfecting circulating irrigation water only the table is normally disinfected while it is without plants or irrigation water. This is necessary with respect to the plants and the working environment.

The composition of the microflora in circulating irrigation water is normally very wide-ranging and it acts as a buffer. After disinfection during operation, the microflora is kept at bay. As a result of lack of buffer, a monoculture of Trichoderma spp can be formed which is known to have the effect of a biological control on root-pathogen fungi. Alternatively, the addition of other biological control microorganisms can take place immediately after disinfection.

Invention 1

The invention relates to standard disinfection of recirculating irrigation systems with, to allow disinfection to take place during operation, the plants taking up 0.125 to 0.25% of the commercial product. This provides a better effectiveness against disease germs while the agent remains effective for a longer period.

The invention also relates to standard disinfection with the total irrigation system being disinfected at the same time.

The active substance peracetic acid breaks down to acetic acid which is biodegradable and causes no damage to the environment.

Invention 2

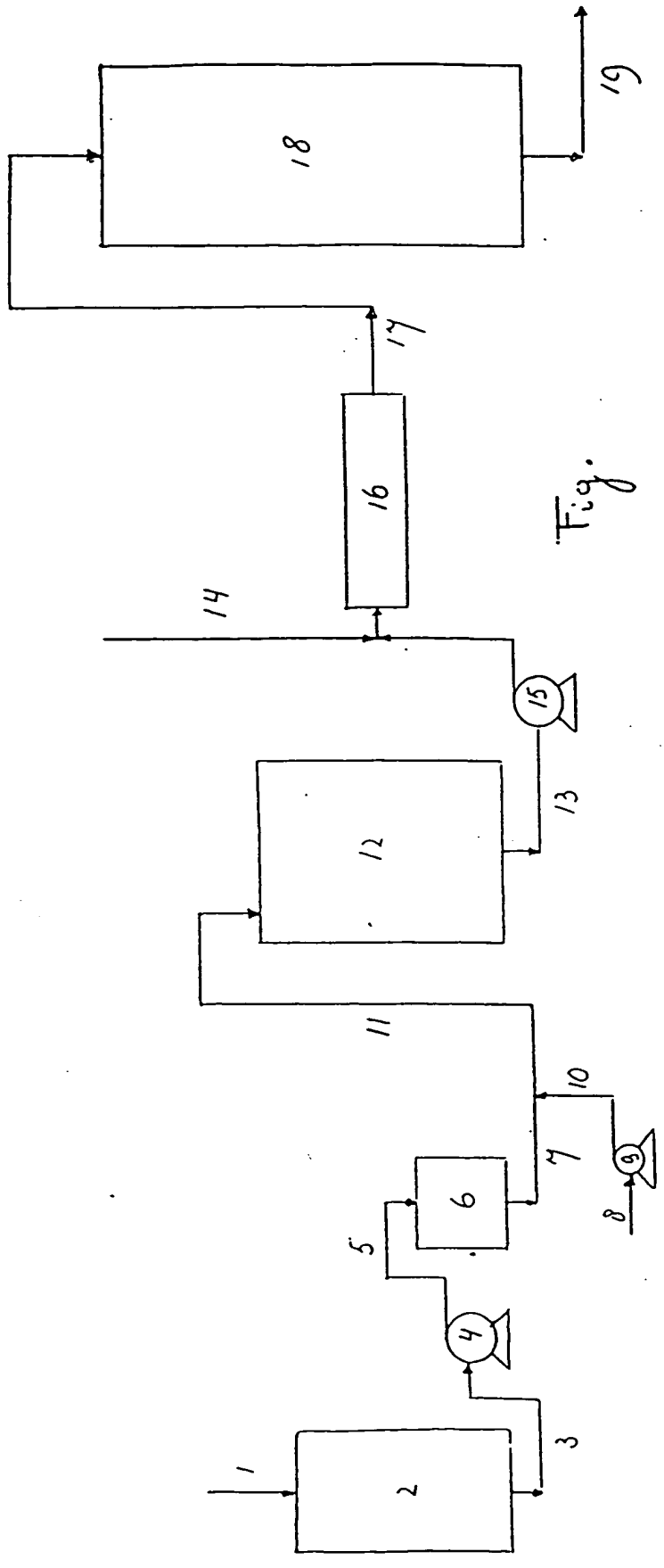
The invention relates to standard biological control with the active microorganisms being formed naturally or the sterile medium being added after previous disinfection. In this way, the micro-organisms can be freely formed in ecological "niches" without competition from the naturally occurring microflora.

Summary

The invention consists of 1) disinfection of circulating irrigation systems for cultivation with peracetic acid while the plants are cultivated in the system, 2) a subsequent biological control of plant pathogens by the addition of microorganisms with a biologically controlling effect or via the natural formation of Trichoderma spp. During disinfection, the low pH which is damaging to plants can be avoided by adding peracetic acid to the untreated water or "loading" substitute phosphoric acid be replaced during the preparation of the fertiliser water .

Translated from Dutch by I. Bose, Group Translation Dept. Luton
IB/LF/28/9/95

Copy to: T. Pearce Widnes



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